AMERICAN MUSEUM
NOVITATES

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CITY OF NEW YORK MARCH 2, 1951 NUMBER 1491

THE GENUS *STYGNOMMA* (PHALANGIDA)[1]

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Those members of the Phalangodidae with five areas, no scopula on the tarsi of the third and fourth legs, with two segments in the distitarsus of the tarsus of the first leg and three in the distitarsus of the tarsus of the second leg, and with no eye tubercle have previously been classified as members of the subfamily Stygnommatinae.

This classification has resulted in a series of monotypic genera, the definition of which in our opinion actually conceals the true relationships that exist among the various species. These monotypic genera, based on slight variations in tarsal segments and dorsal armature, are at best confusing. When all the species in the group are examined, it becomes evident that the importance of these differences has been greatly exaggerated, and actually there is no great difference between any of the genera.

Tarsal segmentation at the most varies only by a few segments, constituting good specific differences, but here they are not of generic importance. In a series of a single species, there is some variation in the tarsal segment number. For example, *Stygnomma fuhrmanni* Roewer may have six or seven segments in the tarsus of the first leg. In the case of one specimen studied, one side had six segments while the other had seven. For a time it was thought that another separation might be the presence or absence of a median spine between the eyes on the cephalothorax. This difference is noticeable when we see extremes such as *S. annulipes* and *S. spinifera*. However, when *S. fuhrmanni* is

[1] This research was aided in part by the Purdue Research Foundation, Grant Number 517.

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again studied, it is found that there is a reduced median spine which may even be lacking in some specimens.

For these reasons, it is thought best to unite these species in one genus, *Stygnomma* Roewer, to simplify our generic concepts, and perhaps bring them closer to genera in other comparable groups. It may be that in this way we can finally show phylogenetic relationships of the various genera.

The only difference between the old subfamily Stygnommatinae Roewer and the tropical Phalangodinae Roewer is the lack of an eye tubercle. Here again this would seem to be a clear-cut division that could separate off a distinct group, but recently studied specimens show that this difference is not so abrupt as once thought.

In the new species *Stygnomma maya* the eyes are not on a common eye tubercle, but they are much closer together than in any other species. A small elevation between them indicates that they are but slightly removed from a species with a common eye tubercle. These eyes are separated by only a very short distance from the base of the central tubercle. Furthermore an undescribed species from Palenque, Chiapas, has the eyes on a common eye tubercle, but part of the eye is actually off the base. For these reasons, it is believed desirable to regard this difference as of only generic rank and not of subfamily importance. It is thus seen from these species that the gradual loss of the common eye tubercle is an evolutionary trend, with living species showing the manner in which it has been lost.

The holotypes of the new species are deposited in the collection of the American Museum of Natural History and, unless otherwise noted, material studied is also in this collection.

The writers wish to thank Mr. and Mrs. Antonio Gonzalez for their hospitality during the writers' short stay at the coconut plantation of the Gonzalez family at Tancah, near Touloum, on the coast of the Territory of Quintano Roo, Mexico.

SUBORDER LANIATORES THORELL

PHALANGODIDAE SIMON

PHALANGODINAE ROEWER

STYGNOMMA ROEWER, EMEND.

Phalangodes (in part) PACKARD, 1888, Mem. Natl. Acad. Sci., Washington, vol. 4, p. 52.

Scotolemon (in part) BANKS, 1901, Amer. Nat., vol. 35, p. 671.

Neoscotolemon (in part) ROEWER, 1912, Arch. Naturgesch., vol. 78, sect. A, no. 3, p. 149; 1923, Die Weberknechte der Erde, pp. 112–113.

Stygnomma ROEWER, 1914, Mém. Soc. Sci. Nat. Neuchatel, vol. 5, p. 155; 1923, Die Weberknechte der Erde, p. 144. PETRUNKEVITCH, 1925, Trans. Connecticut Acad. Arts Sci., vol. 27, pp. 62–63.

Zygobunus CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., vol. 62, p. 245. ROEWER, 1927, Abhandl. Naturwiss. Ver. Bremen, vol. 26, pp. 545–546. GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1198, p. 4.

Stygnommatiplus ROEWER, 1927, Abhandl. Ver. Naturwiss. Bremen, vol. 26, p. 543.

Poascola ROEWER, 1933, Ann. Naturhist. Mus. Wien, vol. 46, p. 281.

Antagona GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1184, p. 6.

Citranus GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1188, p. 4.

Rula GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1188, p. 13; 1945, Ciencia, vol. 6, no. 2, pp. 62–63.

Flaccus GOODNIGHT AND GOODNIGHT, 1947, Fieldiana: Zool., vol. 32, no. 1, pp. 9–10.

Members of the family Phalangodidae without a common eye tubercle, with five dorsal areas on the abdominal scute, the first area without a median line, tarsi of third and fourth legs without scopulae, and with simple untoothed double claws, femur of first leg normal, distitarsus of tarsus of first leg with two or three segments, third leg with metatarsus not divided into astragulus and calcaneus, and palpus and chelicera somewhat enlarged, varying in individual species. Secondary sexual characters of the male occur in the increased spination of the palpus and chelicera and the enlargement of some portion of the metatarsus of the third leg.

GENOTYPE: *Stygnomma fuhrmanni* Roewer.

KEY TO SPECIES OF *Stygnomma*

1. Spiracle clearly visible, not concealed in any degree by the fourth coxa ..... *S. fuhrmanni*
   Spiracle partly concealed by a posterior expansion of the fourth coxa... 2
2. Spine present between the eyes..... 3
   Spine not present between the eyes..... 4
3. Eyes close together, lacking development of spines on the free tergites ..... *S. maya*
   Eyes widely separated, with some spinose development of tubercles of free tergites in the males..... *S. spinifera*
4. Fourth coxa with large spines visible from above..... *S. spinulata*
   Fourth coxa without such spines..... 5
5. Size about 1 mm. in length, color very light yellow..... *S. teapensis*
   Size about 2 mm. in length, dorsum darker..... *S. annulipes*

Stygnomma fuhrmanni Roewer

Figures 1, 2, and 3

Stygnomma fuhrmanni ROEWER, 1914, Mém. Soc. Sci. Nat. Neuchatel, vol. 5, p. 155, pl. 8, fig. 7; 1923, Die Weberknechte der Erde, p. 145, fig. 157.

Stygnomma rufum PETRUNKEVITCH, 1925, Trans. Connecticut Acad. Arts Sci., vol. 27, p. 62.

Stygnomma armatum PETRUNKEVITCH, 1925, Trans. Connecticut Acad. Arts Sci., vol. 27, p. 63, fig. 1.

Zygobunus barronus CHAMBERLIN, 1925, Bull. Mus. Comp. Zool, vol. 67, p. 245. ROEWER, 1927, Abhandl. Ver. Naturwiss. Bremen, vol. 26, p. 546. GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus Novitates, no. 1198, p. 4, figs. 10, 11, 12.

Stygnommatiplus rufus ROEWER, 1927, Abhandl. Naturwiss. Verein Bremen, vol. 26, p. 546.

Stygnommatiplus armatus ROEWER, 1927, Abhandl. Naturwiss. Verein Bremen, vol. 26, p. 544, fig. 6.

Poascola reimoseri ROEWER, 1933, Ann. Naturhist. Mus. Wien, vol. 46, p. 281, fig. 5.

Zygobunus rufus GOODNIGHT AND GOODNIGHT, 1949, Zoologica, vol. 34, p. 21.

MALE: Total length of body, 5.4 mm. Cephalothorax, 3 mm. Width of body at widest point, 4.1 mm.

	I	II	III	IV
Trochanter	0.7 mm.	0.9 mm.	0.9 mm.	0.9 mm.
Femur	3.2	4.0	3.1	3.9
Patella	1.2	1.3	1.3	1.4
Tibia	2.5	3.7	2.2	3.0
Metatarsus	3.6	4.9	3.7	4.6
Tarsus	1.5	3.7	1.8	2.4
Total	12.7 mm.	18.5 mm.	13.0 mm.	16.2 mm.

Dorsum finely granulate, a transverse row of very small tubercles across each area and each free tergite. A row of tubercles also present on the lateral margin of the abdominal scute. Cephalothorax arched, eyes widely separated, without a common eye tubercle. Midway between the eyes, a small elevation which is surmounted by a very small spine. This spine varies in size in different individuals. In some it is so small as to be scarcely visible. Anal operculum tuberculate, free sternites each with a transverse row of small tubercles. Coxae tuberculate, with a row of larger tubercles across the first. Third coxa with an anterior and posterior row of teeth. Fourth coxa not widened posteriorly, permitting the spiracles to be clearly visible.

Trochanters globular, tuberculate. Femora with rows of heavy tubercles which on the fourth femur are enlarged into a row of small spines on each retrolateral surface. Remainder of legs clothed with hairs and small tuberculations. Distal third of metatarsus of third leg enlarged. Tarsal segments: 6 or 7-13 or 14-6-7. Distitarsus of first tarsus with two segments, second with three.

Palpus: trochanter, 1 mm. long; femur, 2.9; patella, 1.6; tibia, 2.8; and tarsus, 1.2. Total length, 9.5 mm. Palpus armed retrolaterally as in figure 2. Tibia armed with two spine-tipped tubercules on the prolateral surface; tarsus with one or two. Femur and patella unarmed on the prolateral surface. Tarsal claw long and curved.

Chelicera much enlarged. Proximal segment strongly arched, with scattered tuberculations, particularly on the ventral surface. Dorsally, several small spines irregularly scattered and with one or two large, slightly curved spines. Distal segment large and globular, with an anterior row of tubercules. Claw large and curved inward.

Entire animal reddish brown, dorsum with darker pencilings as in figure 1. Legs somewhat lighter, with darker mottlings.

FEMALE: Total length of body, 6.1 mm. Cephalothorax, 2.3 mm. Width of body at widest portion, 3.8 mm.

Similar in appearance to male, except that the spines of the coxa, trochanter, and femur of the palpus are much reduced. While the chelicera is somewhat enlarged, it does not attain the proportions of that of the male.

SPECIMENS EXAMINED: One male and two females from Port Limon, Costa Rica, collected March 25, 1905 (F. C. Paulmeier). Two females and one male from Rancho Grande, Venezuela, March 4, 1945 (W. Beebe).

The following holotypes were also studied: *Zygobunus barronus* Chamberlin in the collection of the Museum of Comparative Zoölogy from Barro Colorado Island, Canal Zone; *Stygnomma rufum* Petrunkevitch from Cerro Flores, Panama, and Limon, Costa Rica; and *Stygnomma armatum* Petrunkevitch from Costa Rica. These last two holotypes are in the collections of Yale University.

Stygnomma fuhrmanni Roewer was from the Plateau of Camelia, Colombia, and is in the collection of the Museum of

Basel. *Poascola reimoseri* Roewer is from Poás, Costa Rica, and is in Roewer's collection. These two were not examined.

Poascola reimoseri Roewer, according to the description, differs from the typical species of *S. fuhrmanni* by the number of segments in the tarsus of the first leg. It has seven, whereas *S. fuhrmanni* has but six. The present authors do not consider this to be a valid difference, as it appears to be a highly variable character. The genera *Zygobunus* and *Stygnommatiplus* were originally stated to differ from *Stygnomma* by possessing a median spine between the eyes. As was indicated above, this too should be considered an extremely variable character.

This is the only member of this genus as defined at present to have the spiracle not partially obscured by the coxa of the fourth leg. In all other respects, however, it fits the other generic concept of the genus. Since the degree of development of this fourth coxa is progressive and since other groups show this development in different stages, it is perhaps best not to consider it as a generic difference.

Stygnomma annulipes (Goodnight and Goodnight)

Figures 10, 11, and 12

Flaccus annulipes GOODNIGHT AND GOODNIGHT, 1947, Fieldiana: Zoology, vol. 32, no. 1, pp. 9–12, fig. 4.

MALE HOLOTYPE: Total length of body, 2.2 mm. Cephalothorax, 0.7 mm. Width of body at widest portion, 1.6 mm.

	I	II	III	IV
Trochanter	0.2 mm.	0.4 mm.	0.4 mm.	0.4 mm.
Femur	1.0	1.8	1.4	1.7
Patella	0.4	0.5	0.4	0.5
Tibia	0.6	1.6	1.0	1.4
Metatarsus	0.9	1.9	1.4	2.0
Tarsus	0.6	1.5	0.9	1.0
Total	3.7 mm.	7.7 mm.	5.5 mm.	7.0 mm.

Abdominal scute granulate, with a transverse row of tubercles across each area, middle tubercles somewhat larger, almost enlarged into spines on the third and fourth areas. First area somewhat constricted in the center. Lateral margin of scute with a

row of small tubercles. Cephalothorax smooth, eyes separated, without a common eye tubercle. Anterior margin of cephalothorax smooth. Anal operculum tuberculate. Each free tergite with a transverse row of tubercles. Each free sternite with a transverse row of very small granulations. Coxae granulate, third coxa with an anterior and posterior row of teeth. Fourth coxa widened posteriorly so as to conceal the spiracles partially, widened laterally so as to be visible from above.

Trochanters granulate, femora tuberculate. Remainder of legs clothed with hairs. Metatarsus of third leg conspicuously enlarged in the median region. Tarsal segments: 5-7-6-6. Distitarsi of both first and second legs with three segments. Base of metatarsus of third leg with a false articulation.

Palpus: trochanter, 0.3 mm. long; femur, 0.6; patella, 0.4; tibia, 0.4; and tarsus, 0.4. Total length, 2.1 mm. Palpus armed retrolaterally as in figure 12. Prolaterally the femur has two apical median spines, the patella one, and the tibia and tarsus each have two spines. Tarsal claw long and curved, but not so heavy as in other species.

Chelicera tuberculate, small, clothed with hairs. Jaws strongly curved towards the median line. Proximal segment with only a very slight dorsal elevation.

Dorsum with much darker brown mottling, forming an intricate network pattern on the cephalothorax, with reddish brown filling in the spaces. Median and lateral areas of abdomen reddish brown, remainder of dorsum dark brown. Fourth coxa as seen dorsally with dark and light bands. Venter reddish brown, with some darker brown mottling on the sternites. Legs banded with lighter and darker brown areas, giving an annulate appearance. Palpus and chelicera light yellowish brown.

TYPE LOCALITY: Male holotype from Tierre Blanca, Vera Cruz, July 28, 1941 (H. S. Dybas). This holotype is in the collection of the Chicago Natural History Museum and was restudied through the courtesy of Mr. Dybas.

Stygnomma maya, new species

Figures 7, 8, and 9

MALE HOLOTYPE: Total length of body, 2.3 mm. Cephalothorax, 1.1 mm. Width of body at widest portion, 1.9 mm.

	I	II	III	IV
Trochanter	0.2 mm.	0.3 mm.	0.3 mm.	0.4 mm.
Femur	1.0	1.5	1.3	1.4
Patella	0.4	0.3	0.4	0.5
Tibia	0.7	1.3	1.0	1.3
Metatarsus	1.0	1.4	1.4	1.7
Tarsus	0.8	1.4	0.8	1.0
Total	4.1 mm.	6.2 mm.	5.2 mm.	6.3 mm.

Entire dorsum thickly covered with small tuberculations which are larger and more regularly spaced at the posterior margin of the fifth area and on each free tergite. Anterior margin of cephalothorax smooth. Eyes not mounted on eye tubercle, though there is a small elevation between them that causes them to appear closer together than in most members of this genus. The small median elevation is surmounted by a slightly curved tuberculate spine. Anal operculum and each free tergite with a transverse row of small tuberculations. Coxae tuberculate, fourth coxa expanded so as to obscure the spiracle. A posterior row of teeth on the second and third coxae. A small, shelf-like elevation is present on the ventral proximal surface of the fourth coxa.

Trochanters globular, femora tuberculate, remainder of legs smooth except for scattered hairs. Median portion of the third metatarsus somewhat enlarged. Torsal segments: 4-6-5-6. Distitarsus of tarsus of first leg with two segments, second with three.

Palpus: trochanter, 0.3 mm. long; femur, 0.9; patella, 0.4; tibia, 0.7; and tarsus, 0.7. Total length, 3.0 mm. Palpus armed retrolaterally as in figure 8. Prolaterally the femur and patella each have a median apical spine, the tibia and tarsus each have two spines.

Chelicera enlarged, proximal segment with a small dorsal elevation. Chelicera smooth, claws curved inward.

Body of animal reddish brown, appendages lighter, with darker brown mottlings on the legs.

TYPE LOCALITY: Male holotype from Chichen Itza, Yucatan, June, 1948 (C. and M. Goodnight).

Stygnomma spinifera (Packard)

Phalangodes spinifera PACKARD, 1888, Mem. Natl. Acad. Sci., Washington, vol. 4, p. 52, pl. 13, figs. 2, 2a-c.

Scotolemon spinifera BANKS, 1901, Amer. Nat., vol. 35, p. 672.

Neoscotolemon spinifera ROEWER, 1912, Arch. Naturgesch., vol. 78, sect. A, no. 3, p. 150; 1923, Die Weberknechte der Erde, p. 112.

Citranus marquesas GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1188, p. 4, figs. 7, 8, 9.

Rula spinifera GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1188, p. 13, figs. 43, 45.

Rula bolivari GOODNIGHT AND GOODNIGHT, 1945, Ciencia, vol. 6, no. 2, pp. 62–63, figs. 1–4.

Rula cotilla GOODNIGHT AND GOODNIGHT, 1945, Ciencia, vol. 6, no. 2, pp. 63–64, figs. 5–7.

Dorsum granulate, with a transverse row of tuberculations across each area and each free tergite. Median tubercle of each free tergite may be enlarged into a spine. Cephalothorax granulate, eyes separated with a sharp spine between them. Anal operculum tuberculate. Each free sternite with a transverse row of tuberculations. Coxae tuberculate, rows of teeth on the anterior and posterior margins of the third coxa. Surface of first coxa with larger tuberculations. Fourth coxa expanded so as partially to hide the spiracles.

Legs tuberculate, distal two-thirds of metatarsus of third leg enlarged in males. Tarsal segments: 4-8 to 13-5-5. Distitarsus of tarsus of first leg with two segments, second with three.

Palpus variously spined as indicated in subspecific descriptions.

Chelicera enlarged, with a dorsal apical elevation on the proximal segment.

Color of body uniform reddish brown, appendages lighter.

Until sufficient material was obtained for study, it was not clear that this represented but a single species with a wide distribution. There are slight differences in the populations from Florida, Cuba, and Quintano Roo; however, these differences are more a matter of degree than actual differences of structure. For instance, the spination of the free tergites is extremely variable: typically the Florida form shows enlargement of both the median tubercle and the lateral tubercles; the Cuba form shows enlargement of the median tubercle; while that from Quintano Roo shows only very slight enlargement of the lateral tubercles.

Stygnomma spinifera spinifera (Packard)

Figures 15, 16, 17, and 18

Phalangodes spinifera PACKARD, 1888, Mem. Natl. Acad. Sci., Washington, vol. 4, p. 52, pl. 13, figs. 2, 2a-c.

Scotolemon spinifera BANKS, 1901, Amer. Nat., vol. 35, p. 672.

Neoscotolemon spinifera ROEWER, 1912, Arch. Naturgesch., vol. 78, sect. A, no. 3, p. 150; 1923, Die Weberknechte der Erde, p. 112.

Citranus marquesas GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1188, p. 4, figs. 7, 8, 9.

Rula spinifera GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1188, p. 13, figs. 43, 45.

MALE: Total length of body, 3.4 mm. Cephalothorax, 1.2 mm. Width of body at widest portion, 2.5 mm.

	I	II	III	IV
Trochanter	0.4 mm.	0.5 mm.	0.5 mm.	0.6 mm.
Femur	1.4	2.2	1.5	1.9
Patella	0.7	0.9	0.6	0.9
Tibia	1.1	1.9	1.2	1.7
Metatarsus	1.4	2.1	1.8	2.5
Tarsus	0.8	2.1	1.0	1.2
Total	5.8 mm.	9.7 mm.	6.6 mm.	8.8 mm.

Dorsum finely granulate, a transverse row of tubercles across each area. These are largest on the fifth area and on each free tergite. Each free tergite with a prominent median spine, the third being the smallest. Two to three larger spines at the lateral margin of the first and second free tergites, third free tergite with three very large spines at the lateral portion. Cephalothorax smooth, anterior margin unarmed except for a few small tubercles at the lateral portion. Eyes widely separated, with a slight elevation between. Dorsal portion of anal operculum with a prominent median spine and three smaller spines. Each free tergite with a transverse row of small tubercles, coxae tuberculate.

Trochanters globular, tuberculate, femora with rows of small tubercles. Remainder of legs clothed only with hairs. Third legs with the metatarsi somewhat expanded in the distal half. Tarsal segments: 4-8-5-5. Distitarsus of tarsus of first leg with two segments; of second leg, with three.

Palpus: trochanter, 0.5 mm. long; femur, 1.8; patella, 1.1; tibia, 1.5; tarsus, 1.9. Total length, 6.8 mm. Palpus armed retrolaterally as in figure 16. Femur armed prolaterally with two median spines, patella with an apical median spine, tibia with three spines, and tarsus with five. Claw large.

Chelicera large, with a dorsal elevation on the proximal segment. Claws curved inward.

Body reddish brown, appendages lighter yellowish brown, with darker brown mottlings on the legs.

FEMALE: Total length of body, 3 mm. Cephalothorax, 0.8 mm. Width of body at widest portion, 2.2 mm.

Similar in appearance to male, but posterior spines of the free tergites and anal operculum reduced to tuberculations. The lateral ones not particularly elevated. Third metatarsus not enlarged, palpus reduced in size.

TYPE LOCALITY: Male holotype from Florida; no further data given. Holotype in the collection of the Museum of Comparative Zoölogy, Harvard University. This specimen has been studied.

RECORDS: Male from Royal Palm Hammock State Park, Florida, December 29, 1940 (A. F. Archer). Description of the species was made from this animal. Female from Homestead, Florida, December 27, 1940 (A. F. Archer). Females from Marquesas Key, Florida, June 23, 1938, and Barracuda Key, Florida, June 13, 1938 (George Van Hyning).

Further study and consideration of variations makes it evident that *C. marquesas* Goodnight and Goodnight is actually a synonym of this subspecies.

Stygnomma spinifera bolivari (Goodnight and Goodnight)

Figures 19, 20, and 21

Rula bolivari GOODNIGHT AND GOODNIGHT, 1945, Ciencia, vol. 6, no. 2, pp. 62–63, figs. 1–4.

Rula cotilla GOODNIGHT AND GOODNIGHT, 1945, Ciencia, vol. 6, pp. 63–64, figs. 5–7.

MALE HOLOTYPE: Total length of body, 3.5 mm. Cephalothorax, 1.2 mm. Width of body at widest portion, 2.3 mm.

	I	II	III	IV
Trochanter	0.4 mm.	0.5 mm.	0.5 mm.	0.6 mm.
Femur	1.4	2.1	1.6	2.0
Patella	0.7	0.9	0.7	0.9
Tibia	1.0	1.7	1.1	1.7
Metatarsus	1.6	2.2	1.7	2.5
Tarsus	0.9	2.0	1.1	1.5
Total	6.0 mm.	9.4 mm.	6.7 mm.	9.2 mm.

Dorsum finely granulate, a transverse row of tuberculations across each area and each free tergite with the exception of the

first area; however, some specimens do have a row of small tubercles across this first area. Middle pairs of tubercles of first to fourth areas enlarged into small spines. Middle tubercles of fifth area and the three free tergites enlarged into a prominent acute spine. Transverse rows of tubercles of the free tergites larger than those on the areas. Cephalothorax with small granulations, eyes widely separated, median elevation between them surmounted by a straight, acute spine. Spine is very large and prominent. Anterior margin of cephalothorax smooth, with a slight elevation in the median area. Anal operculum covered with tuberculations, each free sternite with a transverse row of hair-tipped tubercles. Coxae tuberculate, surface of first coxa with heavier tuberculations.

Trochanters globular, covered with small, hair-tipped tubercles. Small tuberculations on the patellae, remainder of legs clothed mainly with hairs. Distal two-thirds of metatarsus of third leg somewhat enlarged. Tarsal segments: 4-7 to 12-5-5. Distitarsus of tarsus of first leg with two segments, second with three.

Palpus: trochanter, 0.5 mm. long; femur, 2; patella, 1.1; tibia, 1.4; and tarsus, 2.1. Total length, 7.1 mm. Palpus armed retrolaterally as in figure 21. Prolaterally the femur has two apical median spines, the patella has but one spine, the tibia has three, and the palpus has five spine-tipped tubercles.

Chelicera enlarged, with a dorsal apical elevation on the proximal segment.

Dorsum reddish brown, appendages lighter yellowish brown.

TYPE LOCALITY: Male holotype from Cueva del Cura, Havana, Cuba, September 18, 1943 (C. Bolívar-Pieltain); male and female paratypes from same locality. One male paratype from Cueva de Cotilla, Havana, October 6, 1943 (C. Bolívar-Pieltain).

The specimen from Cueva de Cotilla was originally described by the authors as *Rula cotilla*. It does differ slightly from the described specimen in having a somewhat darker color, the median tubercles of the second to fifth dorsal areas are not so conspicuously enlarged, and the spines of the palpus are somewhat reduced. There is a smaller number of segments in the tarsus of the second leg, but this is a variable character which cannot be considered when they are actually so close in number. Those specimens originally called *Rula bolivari* had the tarsal

segments as follows: 4-10 to 12-5-5; while *R. cotilla* had 4-7 to 8-5-5.

Stygnomma spinifera tancahensis, new subspecies

Figures 13 and 14

MALE HOLOTYPE: Total length of body, 3.2 mm. Cephalothorax, 1.1 mm. Width of body at widest portion, 2.2 mm.

	I	II	III	IV
Trochanter	0.4 mm.	0.5 mm.	0.4 mm.	0.5 mm.
Femur	1.3	2.0	1.5	1.8
Patella	0.6	0.8	0.5	0.8
Tibia	1.0	1.6	1.1	1.6
Metatarsus	1.4	1.9	1.6	2.5
Tarsus	0.9	2.1	1.1	1.2
Total	5.6 mm.	8.9 mm.	6.2 mm.	8.4 mm.

Dorsum granulate, with a transverse row of somewhat larger granulations across each abdominal area and each free tergite. On the third free tergite, these granulations are enlarged into small spines on the lateral portion. Areas of the abdomen poorly defined, and the first without a median line. Lateral margin of scute without granulations. Cephalothorax with eyes widely separated, a small elevation between the eyes, tipped with an acute spine. Base of this spine somewhat granulate, anterior margin of scute smooth. Anal operculum covered with heavy granulations, enlarged into spinules on the dorsal half. Each free sternite with a transverse row of small tuberculations.

Coxae granulate, trochanters globular, femora of legs smooth except for several rows of small granulations. These granulations are largest on the ventral margin of the femur of the third leg. Remainder of legs smooth except for scattered hairs. Distal half of the metatarsus of the third leg slightly enlarged. Tarsal segments: 4-8-5-5. Distitarsus of tarsus of first leg with two segments, second with three.

Palpus: trochanter, 0.5 mm. long; femur, 1.7; patella, 1; tibia, 1.4; and tarsus, 1.6. Total length, 6.2 mm. Palpus armed retrolaterally as in figure 14. Prolaterally, femur with one small, apical median spine, and a second spine in the middle of the segment; patella with an apical median spine; tibia with three spines; tarsus with a row of six small, spine-tipped tubercles.

Tarsal claw heavy, entire palpus much enlarged and heavy in the characteristic manner of the subfamily.

Chelicera enlarged, proximal segment with a dorsal apical elevation. Entire chelicera clothed only with hairs. Cheliceral claws curved inward, with a row of very fine teeth on each claw.

Color of entire body reddish brown, all appendages somewhat lighter, yellowish brown, with darker brown mottlings. These latter particularly prominent at the distal segments of the legs.

FEMALE: Total length of body, 2.6 mm. Cephalothorax, 0.9 mm. Width of body at widest portion, 1.9 mm.

Similar in appearance to male except that the palpus is smaller, the enlargement of the metatarsus of the third leg is lacking, and the tubercles of the free tergites are somewhat reduced.

TYPE LOCALITY: Male holotype and male and female paratypes from Tancah, near the Mayan ruins of Touloum, territory of Quintano Roo, Mexico, August 12, 1949 (C. and M. Goodnight).

Additional male and female paratypes from the Island of Cozumel, territory of Quintano Roo, Mexico, August 16, 1949 (C. and M. Goodnight).

Material studied from the Island of Cozumel again shows the variability that occurs in this species. It is so similar to the Touloum material as to be included in the same subspecies, but there appears to be a tendency for more enlargement of the median spines of the free tergites.

At Tancah, these animals were found in large numbers under the fibrous material from the trunks of the coconut palms. These had fallen on the sand. It is possible that the oil of this palm may have attracted the animals. They were found within a few yards of the Caribbean.

Stygnomma spinulata (Goodnight and Goodnight)

Figures 4, 5, and 6

Antagona spinulata GOODNIGHT AND GOODNIGHT, 1942, Amer. Mus. Novitates, no. 1184, pp. 6–7, figs. 5, 9.

FEMALE HOLOTYPE: Total length of body, 2.3 mm. Cephalothorax, 0.5 mm. Width of body at widest point, 1.5 mm.

	I	II	III	IV
Trochanter	0.3 mm.	0.4 mm.	0.4 mm.	0.4 mm.
Femur	0.9	2.1	1.0	1.4
Patella	0.3	0.9	0.4	0.7
Tibia	0.7	2.2	0.9	1.3
Metatarsus	1.2	2.9	1.1	1.4
Tarsus	0.5	1.4	0.7	0.7
Total	3.9 mm.	9.9 mm.	4.5 mm.	5.9 mm.

Dorsum finely granulate, first area without a median line. Second to fifth areas each with a median pair of very low tubercles. A transverse row of tubercles across the first free tergite, with the median one enlarged into a small spine. Second and third free tergites each with a transverse row of spines, the median spine being the largest. Cephalothorax smooth, eyes widely separated, anterior margin of cephalothorax unarmed. Anal operculum covered with small spines and tubercules. Coxae finely granulate, third coxa with an anterior and posterior row of teeth, fourth coxa considerably widened so as to be partially visible from above. Upper portion of fourth coxa armed with four or five large spines.

Trochanters tuberculate, that of the fourth leg armed ventrally with a spine at the distal portion, and a smaller spine medially. Legs tuberculate, particularly on the basal portions of the segments. Third and fourth legs with the femora spinose, femur of fourth leg with spines much enlarged on the prolateral margin. Smaller spines present on the patella, tibia, and metatarsus of the fourth leg. Tarsal segments: 5-10-5-5. Distitarsus of tarsus of the first leg with two segments, that of the second with three.

Palpus: trochanter, 0.3 mm. long; femur, 0.8; patella, 0.5; tibia, 0.7; and tarsus, 0.4. Total length, 2.7 mm. Palpus armed retrolaterally as in figure 6. Prolaterally the femur has two spines in the apical portion, the patella has one apical median spine, and the tibia and tarsus are armed as on the retrolateral surface. Tarsal claw long and curved, but not heavy.

Chelicera with hairs, anterior portion of distal segment tuberculate. Tarsal claws curved inward, chelicera not enlarged.

Entire body of animal reddish brown, with darker brown

mottlings on the dorsum; appendages somewhat lighter yellowish brown.

TYPE LOCALITY: Female holotype from Uduado, Puerto Rico, March 16, 1906 (W. M. Wheeler).

By error, this animal was indicated to be a male in the original description.

Stygnomma teapensis, new species

Figures 22 and 23

MALE HOLOTYPE: Total length of body, 1.1 mm. Cephalothorax, 0.4 mm. Width of body at widest portion, 0.8 mm.

	I	II	III	IV
Trochanter	0.1 mm.	0.1 mm.	0.2 mm.	0.2 mm.
Femur	0.3	0.6	0.5	0.6
Patella	0.2	0.2	0.2	0.2
Tibia	0.3	0.6	0.4	0.5
Metatarsus	0.4	0.6	0.5	0.6
Tarsus	0.4	0.7	0.3	0.4
Total	1.7 mm.	2.8 mm.	2.1 mm.	2.5 mm.

Dorsal surface with fine reticulations which give a roughened appearance. A row of very small tubercles across the fifth area and along the lateral margins of the dorsal scute. The roughened portion of the first to fourth areas in some specimens gives a semblance of an indefinite transverse row. Anterior margin of cephalothorax smooth, eyes widely separated, no semblance of a spine between the eyes. Areas of the dorsum parallel, first with no median line. Anal operculum with small tuberculations, each free sternite with a transverse row of small granulations. Coxae finely tuberculate, third coxa with an anterior and posterior row of teeth. Fourth coxa widened posteriorly so as to conceal the spiracle.

Trochanters globular; legs smooth, third and fourth femora curved slightly. Metatarsus of third leg conspicuously expanded throughout most of its length. Tarsal segments: 4-6-6-6. Distitarsus of tarsus of first leg with two segments, that of second with three.

Palpus: trochanter, 0.1 mm. long; femur, 0.5; patella, 0.2; tibia, 0.3; and tarsus, 0.2. Total length, 1.3 mm. Palpus armed retrolaterally as in figure 23. Prolaterally the femur has a spine in the medial portion and a smaller spine just proximal to this,

the patella has an apical median spine, and the tibia and tarsus each have three.

Chelicera smooth, proximal segment with a small dorsal elevation, not enlarged to the degree that it is in other species. Cheliceral claws curved inward.

Entire body golden yellow, much lighter than in most related species. Legs and palpus mottled with darker brown, chelicera concolorous with dorsum.

FEMALE: Total length of body, 1.2 mm. Cephalothorax, 0.4 mm. Width of body at widest portion, 0.8 mm.

Similar in appearance to male but lacking the enlarged metatarsus of the third leg.

TYPE LOCALITY: Male holotype, two male paratypes, and one female paratype from Teapa, Tabasco, Mexico, July, 1947 (C. and M. Goodnight).

Careful field collecting failed to reveal this small species in more than one location. They were found under decaying brush piles on a hill above the small settlement around the railroad station of Teapa.

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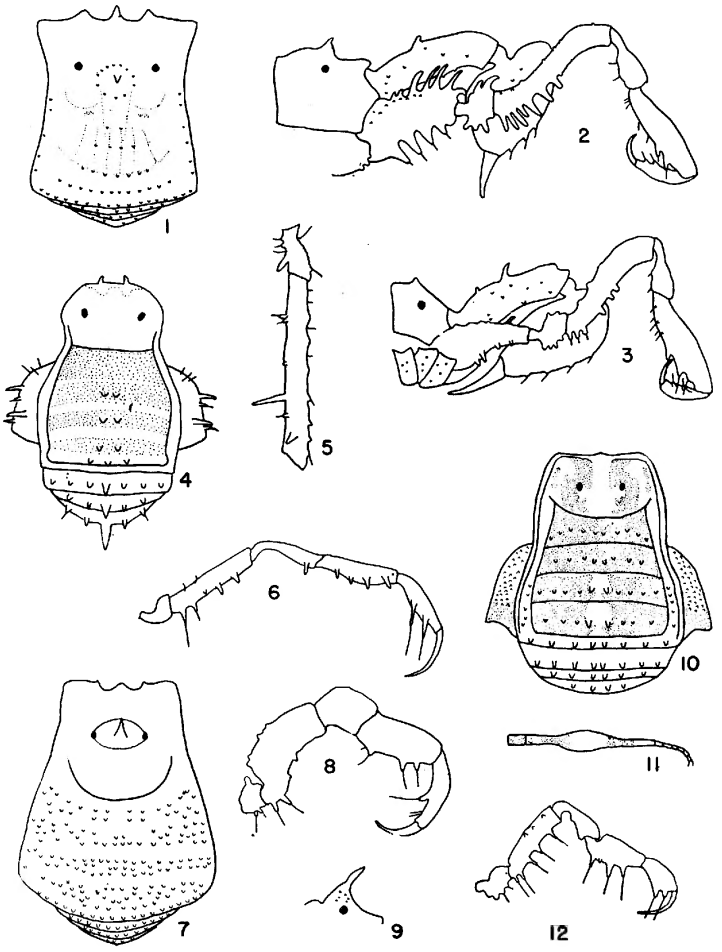
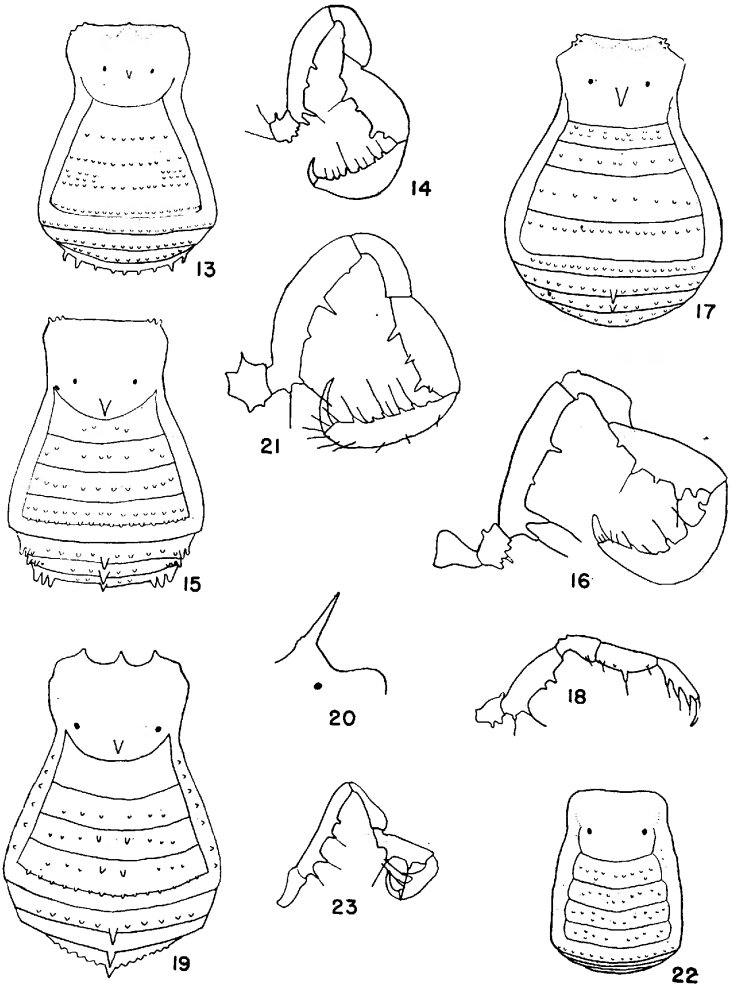


FIGS. 1–3. *Stygnomma fuhrmanni* Roewer. 1. Dorsal view of male. 2. Lateral view of cephalothorax, palpus, and chelicera of male. 3. Lateral view of cephalothorax, palpus, and chelicera of female.

FIGS. 4–6. *Stygnomma spinulata* (Goodnight and Goodnight). 4. Dorsal view of female holotype. 5. Prolateral view of trochanter and femur of fourth leg of female. 6. Retrolateral view of palpus of female.

FIGS. 7–9. *Stygnomma maya*, new species. 7. Dorsal view of male holotype. 8. Retrolateral view of palpus of male holotype. 9. Lateral view of medial spine of cephalothorax of male holotype.

FIGS. 10–12. *Stygnomma annulipes* (Goodnight and Goodnight). 10. Dorsal view of male holotype. 11. Metatarsus and tarsus of third leg of male holotype. 12. Retrolateral view of palpus of male holotype.



FIGS. 13, 14. *Stygnomma spinifera tancahensis*, new subspecies. 13. Dorsal view of male holotype. 14. Retrolateral view of palpus of male holotype.

FIGS. 15–18. *Stygnomma spinifera spinifera* (Packard). 15. Dorsal view of male. 16. Retrolateral view of palpus of male. 17. Dorsal view of female. 18. Retrolateral view of palpus of female.

FIGS. 19–21. *Stygnomma spinifera bolivari* (Goodnight and Goodnight). 19. Dorsal view of male holotype. 20. Lateral view of medial spine of cephalothorax of male holotype. 21. Retrolateral view of palpus of male holotype.

FIGS. 22, 23. *Stygnomma teapensis*, new species. 22. Dorsal view of male holotype. 23. Retrolateral view of palpus of male holotype.